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Cognitive Benefits of Psychological Resilience: An Empirical Study Based on a Cross-Lagged Design

Lihui Huang[1,a,*]

[1]*Faculty of Chinese Medicine Science Guangxi University of Chinese Medicine, Nanning, Guangxi, China*
[a]*Huanglihui614@163.com*

Abstract: *This study examined the longitudinal relationship between psychological resilience and cognitive flexibility among medical students from Chinese private universities. A combined cross-sectional (N=200) and one-year longitudinal (N=249) design was employed. Cross-sectional results revealed a strong positive correlation. Longitudinal cross-lagged analysis demonstrated that prior psychological resilience (T1) significantly predicted subsequent cognitive flexibility (T2) (β= 0.283, p < 0.001), whereas prior cognitive flexibility did not predict later resilience. Dimensional analysis further identified multiple significant predictive paths from resilience dimensions (e.g., goal focus) to cognitive flexibility, with no reverse paths. The findings provide robust evidence that psychological resilience is a significant precursor to cognitive flexibility, suggesting that fostering resilience can promote cognitive benefits in this student population.*

Keywords: *Psychological Resilience, Cognitive Flexibility, Cross-Lagged Analysis, Longitudinal Study*

1. Introduction

Psychological resilience is a dynamic process that enables individuals to maintain mental health and achieve positive adaptation when facing significant adversity, trauma, or stress (Luthar, Cicchetti, & Becker, 2000). This construct encompasses two key elements: exposure to adversity and subsequent positive adaptation (Fletcher & Sarkar, 2013; Vella & Pai, 2019). Early research often conceptualized resilience as a stable personality trait; for instance, Connor and Davidson (2003) defined it as the quality that enables individuals to thrive amid adversity. However, contemporary theories increasingly view resilience as a dynamic process, emphasizing the interaction between individuals and their environments, and recognizing that its expression varies across contexts and over time (Fletcher & Sarkar, 2013; Rutter, 2006).

Cognitive flexibility, a core component of executive function, refers to an individual's ability to adapt to changing task demands and shift mental sets and behavioral strategies (Diamond, 2013). Extensive research indicates that psychological and cognitive flexibility are closely associated with higher daily well-being, better stress coping, and improved interpersonal functioning (Bonanno et al., 2004; Cheng, 2001; Hayes, Luoma, Bond, Masuda, & Lillis, 2006).

While psychological resilience emphasizes the capacity to maintain overall psychological functioning stability amid adversity, cognitive flexibility manifests as the ability to rapidly adjust cognitive processes in response to environmental changes. Empirical research indirectly supports their interconnection: individuals adept at flexibly coping with stress (an expression of psychological resilience) often skillfully employ diverse emotion regulation and coping strategies (an expression of cognitive flexibility) (Bonanno et al., 2004; Cheng, 2001). The emotional stability and resources provided by psychological resilience may create necessary conditions for efficient cognitive flexibility; conversely, strong cognitive flexibility may help individuals effectively utilize diverse coping strategies under stress (Bonanno et al., 2004; Cheng, 2001). However, direct longitudinal evidence remains lacking regarding whether psychological resilience can directly predict improvements in cognitive flexibility—that is, whether psychological resilience yields "cognitive dividends" for individuals.

Within China's higher education system, medical students constitute a distinct group facing significant psychological adaptation challenges. Their high academic pressure, prolonged professional identity formation, and intense future employment competition collectively pose substantial obstacles (Lü Ruxue et al., 2024). Compared to students in public institutions, those in private universities often

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face greater social prejudice, resource scarcity, and weaker professional identity. Therefore, this study selected medical students from private universities as research participants, combining cross-sectional and longitudinal approaches to examine the reciprocal relationship between psychological resilience and cognitive flexibility within this population.

2. Study 1: Cross-sectional Survey on the Relationship Between Psychological Resilience and Cognitive Flexibility

2.1 Participants

A questionnaire survey was conducted among undergraduate medical students at a private university in Guangxi. We distributed 212 questionnaires and collected 200 valid responses, yielding a response rate of 94.34%. The sample comprised 100 male and 100 female participants, with a mean age of 19.09 ± 1.03 years.

2.2 Research Tools

2.2.1 Psychological Resilience Measurement

We primarily used the Adolescent Psychological Resilience Scale developed by Hu Yueqin to measure psychological resilience levels. This 27-item scale employs a 5-point Likert scale, with higher scores indicating greater psychological resilience. The Cronbach's alpha coefficient for this scale in the present study was 0.904-0.934.

2.2.2 Cognitive Flexibility Measurement

Cognitive flexibility was measured using the Cognitive Flexibility Inventory (CFI) developed by Dennis and Vander Wal. This 12-item scale employs a 6-point Likert scale, with higher scores indicating greater cognitive flexibility. The Cronbach's alpha coefficient for this scale in the present study was 0.884-0.904.

2.3 Common Method Bias Examination

This study employed both procedural and statistical controls to mitigate common method bias. First, we informed participants of the study's purpose before administration and administered questionnaires anonymously. Second, we conducted Harman's single-factor test to assess common method bias. Results indicated that the single-factor explained variance was 36.03%, suggesting no severe common method bias in this study.

2.4 Results and Analysis

2.4.1 Descriptive Statistics and Correlation Analysis

Table 1 presents the means, standard deviations, and correlation coefficients for each variable. Correlation analysis revealed that most correlations between age, parental education level, foster care experience, psychological resilience, and cognitive flexibility were not significant. Gender showed a significant positive correlation with the interpersonal assistance dimension of psychological resilience ($r=0.300$, $p<0.01$), with females scoring higher. The total scores of psychological resilience and cognitive flexibility showed a significant positive correlation ($r = 0.791$, $p < 0.01$). All dimensions of psychological resilience were significantly positively correlated with all dimensions of cognitive flexibility, with correlation coefficients ranging from 0.326 to 0.658.

2.4.2 Tiered Regression Analysis

We first set psychological resilience total scores and each dimension as dependent variables. Demographic variables (age, gender, father's educational attainment, mother's educational attainment, foster care experience) were included as first-level predictors. Subsequently, cognitive flexibility total scores and each dimension were added as second-level predictors in a hierarchical regression analysis. Results (Table 2) indicate that among demographic variables, female gender significantly positively predicted psychological resilience total score ($\beta = 0.197$, $p < 0.05$), family support ($\beta = 0.225$, $p < 0.05$), and interpersonal assistance ($\beta=0.456$, $p<0.001$). Foster care experience significantly positively predicted the family support dimension ($\beta= 0.253$, $t=2.089$, $p<0.05$). After controlling for demographic

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variables, the total score of cognitive flexibility significantly positively predicted the total score of psychological resilience (ΔR^2=0.585). Each dimension of cognitive flexibility also significantly positively predicted the total score of psychological resilience, with flexible efficacy demonstrating the strongest predictive power ($\Delta R^2 = 0.485$).

Second, using total cognitive flexibility scores and each dimension as dependent variables, we first included demographic variables as first-level predictors. Then, psychological resilience total scores and each dimension were respectively included as second-level predictors in a hierarchical regression analysis. Results (Table 3) indicate that among demographic variables, maternal educational attainment positively predicted total cognitive flexibility scores ($\beta = 0.170$, $p < 0.01$), flexible efficacy dimension ($\beta = 0.211$, $p < 0.01$), and flexible willingness dimension ($\beta = 0.191$, $p < 0.05$). After controlling for demographic variables, psychological resilience total score significantly positively predicted cognitive flexibility total score ($\Delta R^2 = 0.559$). Each dimension of psychological resilience also significantly positively predicted cognitive flexibility total score, with interpersonal support demonstrating the strongest predictive power ($\Delta R^2 = 0.424$).

3. Study II: Longitudinal Analysis of the Relationship Between Psychological Resilience and Cognitive Flexibility

3.1 Participants

We conducted a questionnaire survey among undergraduate students in the medical school of a private university in Guangxi. The survey was administered in September 2024 (T1) and September 2025 (T2). The final valid sample comprised all participants who completed both surveys (N = 252), with a mean age of 19.46 ± 0.79 years; including 101 males and 148 females.

3.2 Tools

Psychological resilience was measured as in Study 1. The Cronbach's alpha coefficients for the psychological resilience subscale ranged from 0.904 to 0.934 across the two time points. The reliability coefficients for each dimension of psychological resilience at T1 were: Goal Focus 0.775, Emotional Control 0.822, Positive Cognition 0.748, Family Support 0.855, and Interpersonal Support 0.765. At T2: Goal Focus 0.857, Emotional Control 0.826, Positive Cognition 0.804, Family Support 0.859, Interpersonal Support 0.827.

Cognitive flexibility was measured as in Study 1. The Cronbach's alpha coefficients for the cognitive flexibility subscale ranged from 0.884 to 0.904 across the two time points. The reliability coefficients for each dimension of cognitive flexibility at T1 were: Flexible Choice 0.763, Flexible Willingness 0.653, Flexible Efficacy 0.830; at T2: Flexible Choice 0.710, Flexible Willingness 0.823, Flexible Efficacy 0.895.

3.3 Common Method Bias Test

The single-factor variance explained was 28.9% at T1 and 38.72% at T2. These results indicate no severe common method bias in this study.

3.4 Results

3.4.1 Descriptive Statistics and Correlation Analysis

Correlation analysis (Table 4) indicates that psychological resilience and cognitive flexibility exhibited significant positive correlations at both time points. Specifically, the temporal stability correlation for psychological resilience was $r = 0.576$ ($p < 0.001$), while that for cognitive flexibility was $r = 0.479$ ($p < 0.001$), indicating moderate stability for both variables over the one-year period.

Additionally, psychological resilience and cognitive flexibility exhibited significant concurrent and sequential correlations. The correlation between T1 psychological resilience and T1 cognitive flexibility was $r = 0.683$ ($p < 0.001$), while the correlation between T2 psychological resilience and T2 cognitive flexibility was $r = 0.810$ ($p < 0.001$). T1 psychological resilience correlated with T2 cognitive flexibility at $r = 0.483$ ($p < 0.001$), while T1 cognitive flexibility correlated with T2 psychological resilience at $r = 0.358$ ($p < 0.001$). These correlation patterns meet the prerequisites for conducting

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cross-lagged analysis.

Table 4 Descriptive Statistics and Correlation Matrix for All Variables (N = 249)

Variable	1	2	3	4	M	SD
1. T1 Psychological Resilience	—				3.60	0.52
2. T2 Psychological Resilience	.576***	—			3.88	0.55
3. T1 Cognitive Flexibility	.683***	.358***	—		3.86	0.68
4. T2 Cognitive Flexibility	.483***	.810***	.479***	—	4.24	0.72

Note: ***p < 0.001

3.4.2 Repeated Measures ANOVA

A one-way repeated measures ANOVA with psychological resilience as the dependent variable and measurement time (T1, T2) as the independent variable revealed a significant main effect of measurement time ($F(1, 248) = 79.57$, $p < 0.001$, $\eta p^2 = 0.243$). Post hoc analysis indicated that psychological resilience scores at T2 ($M = 3.88$, $SD = 0.55$) were significantly higher than those at T1 ($M = 3.60$, $SD = 0.52$), representing an average increase of 0.28 points. A paired-sample t-test further validated this finding ($t(248) = -8.92$, $p < 0.001$).

A one-way repeated measures ANOVA with cognitive flexibility as the dependent variable and measurement time (T1, T2) as the independent variable similarly revealed a significant main effect of measurement time ($F(1, 248) = 70.46$, $p < 0.001$, $\eta p^2 = 0.221$). Post hoc analyses indicated that cognitive flexibility scores at T2 ($M = 4.24$, $SD = 0.72$) were significantly higher than those at T1 ($M = 3.86$, $SD = 0.68$), representing an average increase of 0.38 points. A paired-samples t-test further confirmed this finding ($t(248) = -8.39$, $p < 0.001$).

3.4.3 Cross-lagged Analysis of Total Psychological Resilience and Total Cognitive Flexibility Scores

We employed an autoregressive cross-lagged model to examine the interrelationship between psychological resilience and cognitive flexibility. After controlling for demographic variables (age, gender, paternal education level, maternal education level, and foster care experience), the model achieved saturation with the following fit indices: CFI = 1.000, TLI = 1.000, RMSEA = 0.000.

Cross-lagged analysis results revealed (Table 5):

(1) For autoregressive paths, psychological resilience at T1 significantly positively predicted psychological resilience at T2 ($\beta = 0.610$, $p < 0.001$), while cognitive flexibility at T1 significantly positively predicted cognitive flexibility at T2 ($\beta = 0.285$, $p < 0.001$), indicating good temporal stability for both variables.

(2) For cross-lagged paths, T1 psychological resilience significantly positively predicted T2 cognitive flexibility ($\beta = 0.283$, $p < 0.001$), while the predictive effect of T1 cognitive flexibility on T2 psychological resilience was not significant ($\beta = -0.051$, $p > 0.05$).

Table 5 Path Analysis of Psychological Resilience and Cognitive Flexibility

Path	Standardized Estimate	Unstandardized Estimate	Standard Error	z-value	p-value
Autoregressive Path	-	-	-	-	-
Psychological Resilience T1 → Psychological Resilience T2	0.610	0.655	0.075	8.735	<0.001
Cognitive Flexibility T1 → Cognitive Flexibility T2	0.285	0.304	0.079	3.866	<0.001
Cross-lagged path	-	-	-	-	-
Psychological Resilience T1 → Cognitive Flexibility T2	0.283	0.397	0.104	3.809	<0.001
Cognitive Flexibility T1 → Psychological Resilience T2	-0.051	-0.041	0.057	-0.733	0.464

3.4.4 Cross-Lagged Analysis of Psychological Resilience Dimensions and Cognitive Flexibility Dimensions

To further explore the interrelationships between psychological resilience and cognitive flexibility at the dimensional level, we conducted cross-lagged analyses between dimensions. Results indicated that, after controlling for demographic variables, multiple dimensions of psychological resilience significantly predicted different dimensions of cognitive flexibility. We identified 12 significant prediction paths from psychological resilience dimensions to cognitive flexibility dimensions (Figure 1 and Figure 2). Specifically, the T1 goal focus dimension predicted T2 flexible choice ($\beta = .216$, $p < .01$), flexible willingness ($\beta = .362$, $p < .001$), and flexible efficacy ($\beta = .277$, $p < .001$). The T1 emotion

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regulation dimension predicted T2 flexible choice (β= .137, p < .05) and flexible intention (β= .241, p < .001), and flexible efficacy (β= .231, p < .001). The T1 positive cognition dimension predicted T2 flexible intention (β= .233, p < .001) and flexible efficacy (β= .209, p < .01), T1 family support significantly predicted T2 flexible intention (β= .156, p < .05), and T1 interpersonal assistance significantly predicted T2 flexible choice (β= .145, p < .05) , flexible intention (β= .131, p < .05), and flexible efficacy (β= .121, p < .05).

All 12 predictive paths ran from psychological resilience to cognitive flexibility, with no significant paths found from cognitive flexibility to psychological resilience. This result aligns with the cross-lagged analysis at the total score level, further supporting the theoretical assumption that psychological resilience serves as a precursor to cognitive flexibility.

Figure 1 Cross-lagged relationships from psychological resilience dimensions to cognitive flexibility dimensions

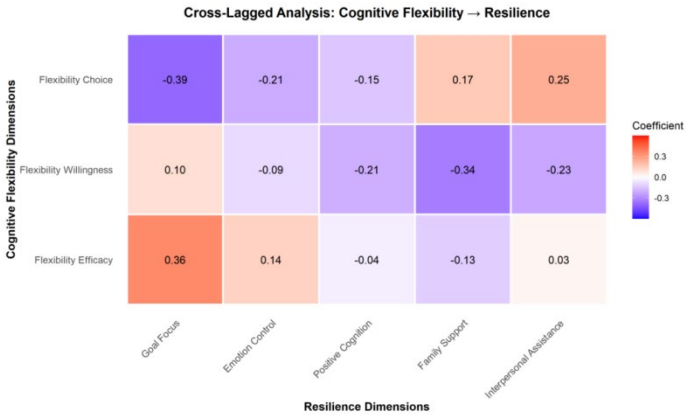

Figure 2 Cross-lagged relationships from cognitive flexibility dimensions to psychological resilience dimensions

4. Discussion

This study employed a cross-lagged model integrating cross-sectional measurements with one-year longitudinal follow-up data to examine the dynamic relationship between psychological resilience and cognitive flexibility among medical students in private universities. To our knowledge, this is the first study to utilize a cross-lagged model in this population to reveal the predictive role of psychological resilience on cognitive flexibility.

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4.1 Current Levels of Psychological Resilience and Cognitive Flexibility among Medical Students in Private Universities

Our findings indicate that female medical students in private universities are more inclined to build psychological resilience through interpersonal assistance, consistent with prior research. This may stem from differing gender role expectations shaped during socialization: traditional norms encourage women to seek help when facing difficulties, whereas men seeking assistance is often perceived as a sign of weakness, reducing their likelihood of doing so.

Maternal educational attainment emerged as a stable and significant demographic predictor of cognitive flexibility. However, after controlling for demographic variables (age, gender, parental education level, and foster care experience), psychological resilience maintained a significant longitudinal predictive effect on cognitive flexibility ($\beta = 0.283$, $p < 0.001$). This indicates that psychological resilience promotes cognitive flexibility beyond demographic influences, representing a relatively stable and significant psychological mechanism.

Both psychological resilience and cognitive flexibility among medical students in private universities showed an upward trend. Over the one-year period from T1 to T2, students' psychological resilience (increased from 3.60 to 3.88) and cognitive flexibility (increased from 3.86 to 4.24) both exhibited statistically significant improvements. Medical students in private universities may face greater environmental adaptation pressures, academic challenges, and anxiety about future uncertainties during their initial enrollment period. However, as they deepen their professional studies, establish peer support systems, and gradually strengthen their identification with the medical profession, their internal resources for coping with stress (psychological resilience) and strategic flexibility (cognitive flexibility) are naturally cultivated and enhanced.

4.2 The Promoting Effect of Psychological Resilience on Cognitive Flexibility

This study found that at a one-year interval, pre-test psychological resilience positively predicted post-test cognitive flexibility. After controlling for variable stability and demographic variables, T1 psychological resilience significantly positively predicted T2 cognitive flexibility ($\beta = 0.283$), while T1 cognitive flexibility did not significantly predict T2 psychological resilience. This asymmetric predictive pattern clearly supports the theoretical hypothesis that "psychological resilience is a precursor to cognitive flexibility," indicating that psychological resilience can yield "cognitive dividends" for individuals.

This finding provides crucial longitudinal evidence for understanding their relationship. While previous cross-sectional studies repeatedly confirmed their strong association, they could not clarify the causal direction. Our results indicate that the emotional stability, positive cognition, and interpersonal resources inherent in psychological resilience provide the necessary psychological prerequisites for the efficient functioning of cognitive flexibility. When students possess high psychological resilience, they are more likely to recover quickly from stress, freeing cognitive resources from managing negative emotions. This enables more effective engagement in cognitive tasks requiring flexible switching and strategic adjustments. Conversely, cognitive flexibility, as a cognitive ability, may not directly constitute a powerful psychological force for coping with adversity. Therefore, its longitudinal impact on psychological resilience is limited.

Cross-lagged analysis at the dimensional level further refined these underlying mechanisms, identifying 12 significant predictive pathways from psychological resilience dimensions to cognitive flexibility dimensions, with no reverse pathways detected. Goal focus demonstrated the strongest predictive power across all three dimensions of cognitive flexibility. This indicates that maintaining clear goals and focused progress during adversity serves as the core driver for individuals to actively seek diverse solutions (flexible choice), willingly adjust existing beliefs (flexible willingness), and maintain confidence in their problem-solving abilities (flexible efficacy).

Additionally, interpersonal assistance exhibited broad predictive effects, highlighting the significance of social support in cognitive development. Positive interpersonal relationships not only provide emotional comfort but also serve as vital sources of information and strategies. Individuals can learn new perspectives and problem-solving methods from others, directly fostering the development of their cognitive flexibility. Positive cognition primarily predicted flexibility willingness and flexibility efficacy. The tendency to perceive positive meaning in adversity makes individuals more "willing" to alter entrenched thinking and holds more positive expectations about the outcomes of change.

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4.3 Research Limitations

This study has several limitations. First, the sample was drawn exclusively from private medical colleges in the same region; future research should validate these findings through sampling more diverse populations. Second, despite employing a longitudinal design, only two follow-up points were collected. Future studies should increase the number of time points to more precisely map the developmental trajectories and long-term patterns of dynamic interaction between the two constructs. Finally, all measurements relied on self-report scales. Future research could enhance validity by incorporating behavioral experimental tasks (e.g.,task-switching paradigms) and neurophysiological indicators for multi-method assessment.

Despite these limitations, this study provides longitudinal evidence supporting the interrelationship between psychological resilience and cognitive flexibility, advancing understanding of the functional role of psychological resilience and offering new insights for enhancing cognitive flexibility.

5. Conclusions

Through cross-sectional surveys and a one-year longitudinal follow-up, this study reached the following conclusions: (1) Psychological resilience and cognitive flexibility are closely linked, with psychological resilience consistently and positively predicting the development of cognitive flexibility, while the predictive effect of cognitive flexibility on psychological resilience is not significant. (2) Among the dimensions of psychological resilience, goal focus, emotion regulation, and interpersonal support significantly predict multiple aspects of cognitive flexibility; conversely, none of the dimensions of cognitive flexibility significantly predict the development of psychological resilience.

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Table 1 Descriptive Statistics and Correlation Matrix for All Variables (N = 200)

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Age	19.90	1.03	1													
2. Gender	-	-	-0.122	1												
3. Father's Educational Attainment	-	-	-0.112	-0.073	1											
4. Mother's educational attainment	-	-	-0.127	-0.079	0.700	1										
5. Foster care experience	-	-	-0.043	0.011	0.205	0.279	1									
6. Psychological Resilience and Emotional Control	3.57	0.59	0.056	-0.088	0.086	0.107	0.149	1								
7. Psychological Resilience Positive Cognition	3.81	0.84	0.048	0.116	0.077	0.111	0.072	0.364	1							
8. Psychological Resilience Family Support	3.87	0.75	-0.073	0.154	0.043	0.068	0.164	0.514	0.546	1						
9. Psychological Resilience and Interpersonal Support	3.81	0.79	-0.088	0.300	-0.025	-0.041	0.073	0.575	0.500	0.589	1					
10. Psychological Resilience Total Score	3.75	0.59	-0.020	0.161	0.057	0.083	0.138	0.716	0.775	0.830	0.820	1				
11. Cognitive Flexibility Selection	4.12	0.66	-0.085	0.164	0.047	0.094	0.118	0.587	0.326	0.579	0.658	0.645	1			
12. Cognitive Flexibility Willingness	4.27	1.00	0.006	0.130	0.136	0.216	0.128	0.411	0.639	0.482	0.500	0.683	0.503	1		
13. Cognitive Flexibility Efficacy	4.10	1.07	0.029	0.142	0.111	0.220	0.211	0.503	0.616	0.523	0.557	0.722	0.527	0.843	1	
14. Total Cognitive Flexibility Score	4.15	0.73	-0.026	0.171	0.108	0.198	0.175	0.591	0.593	0.619	0.673	0.791	0.527	0.843	0.895	1

Table 2 Stepwise Regression Analysis of Cognitive Flexibility on Psychological Resilience

Predictor Variable		Dependent Variable									
		Psychological Resilience Total Score		Emotional Control		Positive Cognition		Family Support		Interpersonal Support	
		β	t	β	t	β	t	β	t	β	t
First Layer	Age	-0.005	-0.12	0.047	0.827	0.067	1.148	-0.059	-1.037	-0.071	-1.405
	Gender	0.017	0.382	-0.192	-3.325**	0.025	0.423	0.036	0.618	0.163	3.161**
	Father's Educational Attainment	0.045	0.736	0.053	0.671	0.037	0.463	0.023	0.297	0.05	0.709
	Mother's Educational Attainment	-0.112	-1.771	-0.079	-0.966	-0.013	-0.15	-0.095	-1.177	-0.205	-2.836**
	Foster care experience	0.019	0.414	0.055	0.941	-0.034	-0.559	0.076	1.294	-0.004	-0.07
Second Layer	Cognitive Flexibility Total Score	0.802	17.540***	0.625	10.639***	0.595	9.834***	0.615	10.488***	0.679	12.984***
	ΔR^2	0.585***		0.356***		0.322***		0.344***		0.420***	
	R^2	0.633		0.394		0.358		0.397		0.519	
	Flexible Choice	0.631	11.272***	0.613	10.680***	0.31	4.491***	0.558	9.360***	0.632	11.871***
	ΔR^2	0.378***		0.357***		0.091***		0.296***		0.380***	
	R^2	0.426		0.395		0.127		0.349		0.479	
	Flexible Willingness	0.684	12.680***	0.42	6.278***	0.638	11.111***	0.472	7.327***	0.501	8.180***
	ΔR^2	0.433***		0.163***		0.376***		0.206***		0.232***	
	R^2	0.481		0.201		0.412		0.26		0.331	
	Flexible Efficacy	0.737	14.160***	0.525	8.157***	0.626	10.504***	0.518	8.097***	0.572	9.641***
	ΔR^2	0.485***		0.247***		0.351***		0.240***		0.293***	
	R^2	0.533		0.285		0.387		0.294		0.392	

Note: $p<0.05$ indicates statistical significance at the 5% level, $p<0.01$ indicates significance at the 1% level, and $p<0.001$ indicates significance at the 0.001 level; β values represent standardized regression coefficients; first-level predictor variables include age, gender, father's educational attainment, mother's educational attainment, and foster care experience; second-level analysis incorporates different cognitive flexibility dimension variables.

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Table 3 Stepwise Regression Analysis of Psychological Resilience on Cognitive Flexibility

Predictor Variable		Dependent Variable							
		Total Cognitive Flexibility Score		Flexible Choice		Flexible Willingness		Flexible Efficacy	
		β	**t**	**β**	**t**	**β**	**t**	**β**	**t**
First Layer	Age	0.013	0.309	-0.061	-1.107	0.045	0.872	0.069	1.43
	Gender	0.058	1.333	0.057	1.021	0.042	0.807	0.049	1.002
	Father's Educational Attainment	-0.055	-0.925	-0.038	-0.495	-0.025	-0.346	-0.081	-1.207
	Mother's Educational Attainment	0.17	2.783**	0.06	0.768	0.191	2.601*	0.211	3.088**
	Foster care experience	0.033	0.743	0.019	0.334	-0.01	-0.188	0.076	1.527
Second Layer	Psychological Resilience Total Score	0.766	17.540***	0.63	11.272***	0.664	12.680***	0.692	14.160***
	ΔR^2	0.559***		0.377***		0.420***		0.455***	
	R^2	0.649		0.427		0.496		0.562	
	Emotional Control	0.591	10.639***	0.606	10.680***	0.404	6.278***	0.488	8.157***
	ΔR^2	0.336***		0.353***		0.157***		0.229***	
	R^2	0.426		0.403		0.233		0.335	
	Positive Cognition	0.561	9.834***	0.305	4.491***	0.611	11.111***	0.581	10.504***
	ΔR^2	0.304***		0.090***		0.360***		0.325***	
	R^2	0.394		0.14		0.436		0.431	
	Family Support	0.591	10.488***	0.56	9.360***	0.461	7.327***	0.489	8.097***
	ΔR^2	0.330***		0.297***		0.201***		0.227***	
	R^2	0.42		0.346		0.277		0.333	
	Interpersonal Support	0.686	12.984***	0.667	11.871***	0.514	8.180***	0.568	9.641***
	ΔR^2	0.424***		0.401***		0.238***		0.291***	
	R^2	0.514		0.451		0.314		0.397	